

**Method for Forming Periodic Electronic Potential Structures in Bulk Solids Using Standing Electromagnetic Waves**

**Abstract:** A method for forming periodic electronic potential structures in doped bulk solids using one or more standing electromagnetic waves is disclosed. Using a single standing electromagnetic wave (47) a monocrystal silicon sample uniformly doped with Li<sup>7</sup> atoms (21) is converted into a monocrystal silicon sample containing planes of Li<sup>7</sup> atoms (57). Using two and three standing electromagnetic waves, oriented perpendicular to one another, a monocrystal silicon sample containing rows or wires of Li<sup>7</sup> atoms (108), and a monocrystal silicon sample containing dots, spots, or clusters of Li<sup>7</sup> atoms (112) can be formed, respectively.